Memory Profiling using Hardware Counters

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Authors Marty Itzkowitz Sun Microsystems, Inc., Menlo Park, California
Brian J. N. Wylie Sun Microsystems, Inc., Menlo Park, California
Christopher Aoki Sun Microsystems, Inc., Menlo Park, California
Nicolai Kosche Sun Microsystems, Inc., Menlo Park, California

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↑ ABSTRACT

Although memory performance is often a limiting factor in application performance, most tools only show performance data relating to the instructions in the program, not to its data. In this paper, we describe a technique for directly measuring the memory profile of an application. We describe the tools and their user model, and then discuss a particular code, the MCFbenchmark from SPEC CPU 2000. We show performance data for the data structures and elements, and discuss the use of the data to improve program performance. Finally, we discuss extensions to the work to provide feedback to the compiler for prefetching and to generate additional reports from the data.

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↑ Collaborative Colleagues:

Christopher Aoki: Marty Itzkowitz
Nicolai Kosche
Brian J. N. Wylie

Marty Itzkowitz: Christopher Aoki
Nicolai Kosche

	Brond Larson
	Steve Turner
	Brian J. N. Wylie
	Marco Zagha
Nicolai Kosche:	Christopher Aoki
	Marty Itzkowitz
	Brian J. N. Wylie
Brian J. N. Wylie:	Christopher Aoki
	Marty Itzkowitz
	Nicolai Kosche